

Appl. No. 10/815,582
Amendment Dated July 10, 2006
Reply to Office Action of March 10, 2006

Remarks:

Reconsideration of the application is requested. Claims 1 and 6-17 remain in the application. Claims 1, 7, and 16-17 have been amended. Claims 2-5 have been canceled.

In the first paragraph on page 2 of the Office action, the Examiner objected to claim 4 for including a typographical error. The features of claim 4 have been incorporated into claim 1 and the misspelled term "Tetrasodudium" has been changed to --tetrasodium--.

In the third paragraph on page 2 of the above-identified Office action, the Examiner has rejected claims 16-17 as being indefinite under 35 U.S.C. § 112, second paragraph. More specifically, the Examiner has stated that the term "the hydrogen peroxide" lacked antecedent basis. Claims 16-17 have been amended to change the terms to --peroxides-- which has support in claim 1.

Accordingly, the specification and the claims meet the requirements of 35 U.S.C. § 112, first and second paragraphs. Should the Examiner find any further objectionable items, counsel would appreciate a telephone call during which the

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matter may be resolved. The changes are not provided for overcoming the prior art.

The Examiner makes a number of anticipation rejections based on 35 U.S.C. § 102. The rejections are addressed in detail below in the order presented.

In item 1 on page 3 of the Office action, the Examiner rejected claims 1, 4, 6, and 8-9 as being anticipated by Fering et al. '485 under 35 USC § 102(b). Claim 1 has been amended to include the features of claims 2-3: namely, that the heavy-metal solution includes manganese gluconate. Because Fering et al. '485 does not teach manganese gluconate, Fering et al. does not anticipate amended claim 1 or any of the claims that depend therefrom.

In item 2 on page 4 of the Office action, the Examiner rejected claims 1-2 and 4 as being anticipated by Bragg '243 under 35 USC § 102(b). As noted, claim 1 has been amended to include the features of claim 3: in particular, that manganese gluconate is used as the heavy-metal salt solution. Because Bragg '243 does not teach this feature, Bragg '243 does not anticipate claim 1 or any of the claims that depend therefrom.

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In item 3 of the Office action, the Examiner rejected claims 1-4, 6, and 9-17 as being anticipated by Montgomery et al. '933 under 35 USC § 102(b). As stated, claim 1 has been amended to include the features of claim 5: namely, PVP is included in the composition. Because Montgomery et al. '933 does not teach PVP, Montgomery et al. '933 does not anticipate amended claim 1 or any of the claims that depend therefrom.

In item 5 of the Office action, the Examiner rejected claims 1-3, 5, and 8-9 as being anticipated by Nabi et al. '734. As stated, claim 1 has been amended to include the features of claim 4: namely, that the chelator is tetrasodium EDTA. Because, Nabi et al. '734 does not teach a chelator that is tetrasodium EDTA, Nabi et al. '734 does not anticipate claim 1 or any of the claims that depend therefrom.

In item 6 of the Office action, the Examiner rejected claims 1, 6, and 9 as being anticipated by Nathoo '913 under 35 USC § 102(e). As stated, claim 1 has been amended to include the features of claims 2-5. Because these features are not taught by Nathoo '913, Nathoo '913 does not anticipate amended claim 1 or any of the claims that depend therefrom.

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In the first full paragraph on page 13 of the Office action, the Examiner rejected claims 1-3 and 5-9 as being unpatentable over Gaffer et al. '805 in view of Banerjee '949 under 35 USC § 103(a). As stated, the features of claim 4 have been added to amended claim 1. Gaffer et al. '805 in view of Banerjee '949 does not teach or suggest the features of amended claim 1: namely, a chelator that is tetrasodium EDTA. Accordingly, amended claim 1 and all of the claims that depend therefrom are not obvious over Gaffer et al. '805 in view of Banerjee '949.

Accordingly, none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Therefore, claim 1 is patentable over the art. Moreover, because all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In addition, Applicants offer the following addition remarks regarding the patentability of the invention.

An object of the invention of the instant application is to provide a stable, pH-buffered, activator-booster that will improve both the speed and effectiveness of peroxide bleaching agents (namely, hydrogen peroxide)- used at levels between 5% and 50%.

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Higher pH levels have been found to activate the hydrogen peroxide more rapidly. This desired high pH must be maintained throughout the procedure. In accordance with this invention, the pH must remain buffered to above 9.0, preferably 10.0 to 11.5 - with the optimum point being 10.5. See especially claims 1 and 6.

Because pH values can decrease during application to the teeth, a suitable pH buffer is used. To this end, Applicant has chosen the alkaline chelating agent, tetrasodium EDTA. An active usage level of tetrasodium EDTA between 2% and 20%: the amount being determined by the concentration of hydrogen peroxide using in the formula.

Certain heavy metal salts have been found to help activate hydrogen peroxide. Applicant's research has led him to choose manganese gluconate at use levels between 0.5% and 5%. Because this manganese salt will precipitate from alkaline solutions (without more), tetrasodium EDTA has been added to chelate the heavy-metal salt, prevent precipitation, and keep the activator-booster clear and effective.

Another key to optimize performance of the activator-booster is to use a surfactant that will lower interfacial surface tension

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to below thirty dynes per centimeter (< 30 dyne/cm). Most anionic and cationic surfactants, although they have excellent wetting times, are most often hydrolyzed and become non-effective at high pH levels. Amphoteric surfactants are very stable at high alkalinity and they are also very gentle on the skin and mouth tissue. Therefore applicant includes amphoteric surfactants at levels between 0.5% and 5% (active washing substances). In particular, the following amphoteric surfactants have been found to be effective: sodium cocoamphoacetate, sodium cocoamphodiacetate, disodium cocoamphoacetate, disodium cocodiamphodiacetate, disodium lauroamphoacetate, and disodium lauroamphodiacetate.

Another key to improving the overall performance of the activator-booster in combination with hydrogen peroxide lies in utilizing the multi-functional benefits of certain water-soluble homopolymers of vinyl-2-pyrrolidone: namely, polyvinylpyrrolidone with K-values between 24 and 95 at use levels between 0.2% and 5%. Such versions of polyvinylpyrrolidone provide the following performance-enhancing benefits:

1. Further improve the long term clarity and stability of the finished product.

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2. Acts as a counter-irritant to minimize skin irritation of the Peroxide-Activator/Booster when it may come into contact with the skin (gums, lips or tongue).
3. Helps increase the adherence of the Activator-Booster Solution when applied to the teeth.

In view of the foregoing, reconsideration and allowance of claims 1 and 6-17 are solicited. In the event the Examiner should still find any of the claims to be unpatentable, please telephone counsel so that patentable language can be substituted.

Petition for extension is herewith made. The extension fee for response within a period of one month pursuant to Section 1.136(a) in the amount of sixty dollars (\$60) in accordance with Section 1.17 is enclosed herewith.

Respectfully submitted,



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